

SKY WATCHER

THE NEWSLETTER FOR NWS-TWIN CITIES SEVERE WEATHER SPOTTERS
MARCH 2004



MINNESOTA TORNADES OF 2003

Forty-seven tornadoes touched down in Minnesota in 2003, with most of the tornadoes occurring on three days, June 24, July 9 and July 14. Fifteen tornadoes occurred on June 24, making it the busiest tornado day of 2003.

Most of the tornadoes on this day touched down in southwest and south central Minnesota, culminating in a strong F2 tornado, which made a direct hit on the town of Buffalo Lake in eastern Renville County. Buffalo Lake is about 70 miles west of Minneapolis. This tornado touched down in far western Sibley County, about 10 miles north of Gibbon, and proceeded to move straight north and heavily damage two farmsteads. The tornado crossed the county line about one mile south of Buffalo Lake and continued on its straight northward trek into the city. Roofs were blown off the Lutheran Church as well as a number of homes and businesses. Sheds and garages were blown down, a grain elevator was destroyed, and hundreds of trees were blown down or damaged. Five people sustained minor injuries. Twenty-nine houses were damaged beyond repair.

At about the same time as the Buffalo Lake tornado, a super-cell thunderstorm was producing a series of weak tornadoes just east of Willmar in Kandiyohi County. Six weak tornadoes touched down in rural areas, from just south of the town of Kandiyohi to just south of the town of Atwater, in a 30 minute time period, from 747 pm to 816 pm CDT. These tornadoes remained in rural areas and resulted in minor damage to several farmsteads.

Kandiyohi County was struck again by a tornado on July 9. A multiple vortex tornado touched down west of the town of Pennock, severely damaging a turkey farm and killing 300 turkeys. The tornado rated F1 remained on the ground for 3 miles and made a direct hit on the Pennock area, knocking down trees, and causing damage to houses including partially removing the roof from one house. Six other tornadoes occurred that day in southwest and south central Minnesota including a brief touchdown in the town of Lake Crystal, just west of Mankato.

Just five days later, another super-cell thunderstorm produced a series of tornadoes across south central Minnesota, skirting the towns of Searles, Lake Crystal, Rapidan and Mankato. A strong F2 tornado touched down on the western edge of a farmstead about 3 miles east of Lake Crystal, demolishing a barn and sheds.

Early warning preparedness efforts, and the partnership of the National Weather Service (NWS) with emergency managers, amateur radio groups, and severe weather spotters contributed to no fatalities and only 5 injuries in Minnesota in 2003.

Here are the last 12 annual tornado tallies for Minnesota:

2003	47	1999	36	1995	33
2002	34	1998	57	1994	34
2001	74*	1997	47	1993	47
2000	33	1996	33	1992	39

* - record

The lowest tornado count for a year was 1950, when only one tornado was reported. In second place was 1951, with 3 tornadoes observed in Minnesota.

Better radar technology to detect possible tornadic storms and a larger number of severe weather spotters have contributed to the increased number of tornado sightings in the last 10 years.



SEVERE WEATHER SPOTTERS - WHAT TO REPORT

The NWS places the utmost importance on weather information gained from the eye of the storm spotter. Your real time observations of hail, wind, tornadoes, and flooding provide a reliable information base for severe weather detection and verification. Doppler Radar **CAN NOT** detect what is happening at ground level. It was designed to look into the heart of storm clouds and their surroundings, to detect wind currents, and other storm structure clues that suggest a storm is or will become severe. Ground-truth spotter reports allow NWS meteorologists to correlate what they see on radar with what is actually happening. **You are assisting NWS staff in their warning decisions and helping the NWS fulfill its mission of protecting life and property, possibly yours or a neighbor, friend or relative.**

You should report to the NWS office in Chanhassen the following weather events if sighted:

TORNADO – violently rotating column of air in contact with the ground.

FUNNEL CLOUD – funnel-shaped cloud extending downward from a thunderstorm. The cloud is a tornado if swirling debris or dust is visible at ground level.

HAIL – try to report the size of the largest hail stone.

WIND DAMAGE – try not to estimate wind speed. Instead, report the damage observed. For example, large branches down, siding stripped off house, etc. The NWS prefers this method since wind speeds are difficult to estimate.

FLOODING – storm sewers unable to handle runoff or water flowing over roads.

HEAVY RAIN – rainfall of an inch or more in a short period of time.

Include the following information when making a report to the NWS:

- ✓ **Who** you are, including your spotter ID number.
- ✓ **Where** the event is occurring or has occurred.
- ✓ **What** you have seen.
- ✓ **What** time the event occurred.
- ✓ Movement of the storm.

Our **confidential** telephone number for reporting severe weather is

Xxx-xxx-xxxx



Please check the newsletter mailed to you for the severe weather reporting telephone number. Or else call our office. Be prepared to identify yourself with spotter identification number.

Please let us know if your address or telephone number changes.



SKYWARN TRAINING CLASSES

Skywarn Training classes put on by NWS personnel typically last 2 to 3 hours and cover material such as proper severe storm spotting procedures, signs for recognizing severe weather potential, and tornado formation. Everyone is invited and there is no charge.

Here is the latest schedule available just before printing of this newsletter

Date	Time	County	City
March 23	630 pm	Nicollet	North Mankato
March 24	7 pm	Anoka	Oak Grove
March 25#	130 pm	Wright	Buffalo
March 25	7 pm	Wright	Buffalo
March 27^	9 am	Ramsey	St. Paul
March 29	7 pm	McLeod	Glencoe
March 30	TBA	Swift	TBA
March 31^	6 pm	Carver	Chaska
April 1	630 pm	Benton	Sauk Rapids
April 3^	8 am	Hennepin	Bloomington
April 5^	6 pm	Chisago	Lindstrom
April 6^	6 pm	Washington	Cottage Grove
April 6	7 pm	Mille Lacs	Princeton
April 7*	1 pm	Stearns	St. Cloud
April 7^	6 pm	Hennepin	Brooklyn Park
April 7*#	6 pm	Stearns	St. Cloud
April 10*	9 am	Stearns	Albany
April 10*#	1 pm	Stearns	Albany
April 14	630 pm	Yellow Medicine	Echo
April 15^	1 pm	Washington	Forest Lake
April 15^	6 pm	Washington	Forest Lake
April 15	7 pm	Chippewa	Montevideo
April 17^	830 am	Hennepin	Brooklyn Park
April 19^	6 pm	Ramsey	Mounds View
April 19#	7 pm	Eau Claire WI	Eau Claire
April 21	630 pm	Todd	Long Prairie
April 22	640 pm	Faribault	Kiester
April 22^	6 pm	Ramsey	Roseville
April 24^	11 am	Ramsey	Roseville
April 26	630 pm	Douglas	Alexandria
April 27	630 pm	Brown	Sleepy Eye
April 29^	6 pm	Ramsey	New Brighton
April 29	7 pm	Todd	Staples
May 1^	11 am	Ramsey	New Brighton
May 6^	6 pm	Ramsey	New Brighton

May 8^	9 am	Washington	Cottage Grove
May 8^	11 am	Ramsey	White Bear Lake
May 13^	6 pm	Ramsey	White Bear Lake
May 15^	Noon	Anoka	Blaine
May 27^	6 pm	Ramsey	White Bear Lake

* - Classes conducted by local emergency management

^ - Classes conducted by the Metro Skywarn Group. Check the Metro Skywarn web page for more details at www.skywarn.ampr.org/sked.htm, or call our office

- Advanced class. Only available if you have attended a basic class in the last year or two.

More classes will be added as local officials contact our office. Attendance is recommended a minimum of every three years. For specific locations or questions, please call our office or check our web page at www.crh.noaa.gov/mpx/skywarn.html



WEATHER RADIO EXPANSION

TODD KRAUSE - WARNING
COORDINATION METEOROLOGIST

The expansion of NOAA Weather Radio across Minnesota is almost complete.

Four more stations will go on the air during the next few months, expanding coverage to virtually all of Minnesota. Three stations in the Gopher State will be added soon (Kensington, Olivia, and Fulda), and a new station is also slated for Ringsted, Iowa, providing coverage to the area around and south of Fairmont and Blue Earth. We were unable to find suitable radio towers near Roseau and Cannon Falls, so those areas are still not well served by NOAA Weather Radio.

Expansion of Weather Radio in western Wisconsin is nearly complete as well. The only area without coverage is around Hayward; hopefully funding will become available to bring coverage to that important region.

In March 2000, only about 1/3 of Minnesota and Western Wisconsin were covered with a total of 17 NOAA Weather Radio stations. Four years and 28 stations later, 98% of the region is covered by 45 NOAA Weather Radio transmitters! For a map showing the stations, frequencies and coverage area, please go to www.crh.noaa.gov/mpx and click on Weather Radio. Or write us and ask for a copy. Radios can be purchased online or at one of the many stores that sell radios; make sure you purchase one with an alarm feature that enables you to immediately hear weather warnings.



Online Weather Reporting System

The National Weather Service in the Twin Cities has a new feature called **eSpotter** on our web site available for trained weather spotters, emergency managers and off-duty meteorologists to report significant weather over the Internet. Registered spotters enter their observations of severe summer and winter weather on a password-protected Internet form. eSpotter is an experimental project to facilitate the submission of spotter reports online. The system has been developed to enhance and increase timely and accurate online spotter reporting and communications between spotters and their local weather forecast offices.

However for **critical, time-sensitive, life-saving** information, please relay your reports through your regular communication method **first**, before using eSpotter. Most of the time this would entail using telephone or digital communications to local law enforcement, fire department and emergency services, or calling the NWS private 800 number. Ham Radio operators would use the appropriate Amateur Radio Services frequency band. The **eSpotter** system is available for transmission of non-critical, non-time-sensitive information that does not pose an imminent danger to life and property. You may follow up reports submitted by telephone or Amateur Radio by sending the information through **eSpotter**, with a note in your narrative highlighting that the information was relayed through an alternate method. A link to the **eSpotter** program is available in the *Current Hazards* section of the left-hand navigation menu on the National Weather Service Twin Cities/Chanhassen web page. Your **eSpotter** report should pop up on the computer screen in the NWS office in the Twin Cities within 5 minutes. However, this time may increase or decrease depending upon the status of the computer server network in Kansas City as well as the amount of communication bandwidth available.

For those who would like to submit a storm report, but are not a trained spotter or emergency manager, please use the "Submit Storm Report" link in the *Current Hazards* section of the left-hand navigation menu. By using this link, your storm report will be sent to the Twin Cities Web Master and Warning Coordination Meteorologist. Those interested in enrolling in the **eSpotter** system must first complete an on-line form before making reports, so their locations can be entered into a database. For those rural users, when registering, enter the location of your residence as the distance and direction from the nearest town in the same county (not your mailing address) in the "default location" box. After you submit your application, you will receive an e-mail confirmation with your password.

How do you become a **trained** severe weather spotter? By attending a **Skywarn TrainingClass** held by the National Weather Service and Metro Skywarn during March, April and May.



SNOWFALL OBSERVERS NEEDED BYRON PAULSON - SENIOR METEOROLOGIST

For over 20 years the National Weather Service in the Twin Cities has relied on a network of volunteers to provide us with timely snowfall reports during winter weather events. We would like to increase the density of spotters to improve the resolution of this source of reports. Since you folks have already demonstrated a keen interest in weather, how would you like to become part of this network of observers?

Our goal is to have around three reliable observers in each of the 51 counties that we have forecast responsibility for. We ask that our volunteers try and keep us as up-to-date as possible with current winter weather conditions. If possible, a call when an inch of snow accumulates is very helpful. Other suggested occasions to call are when the snow accumulation

increases to three inches, and again at six inches. If snow continues to accumulate, try and keep us informed. Calls with reports of freezing rain or blowing snow are also appreciated.

If you are interested, please provide me with your name, telephone number and mailing address. To mail me your request, use the NWS address found at the end of this newsletter, and send your request to my attention. You can also electronically mail me your request. My address is Byron.Paulson@noaa.gov. Also, my telephone number is 952/361-6670 x727. I will then contact you if you are able to help fill in the voids where we have need of winter weather information. A newsletter will also be mailed in the Autumn which provides more detail about the snowfall network. Thank you for your consideration.



WEATHER RADIOS AND INSTRUMENTS

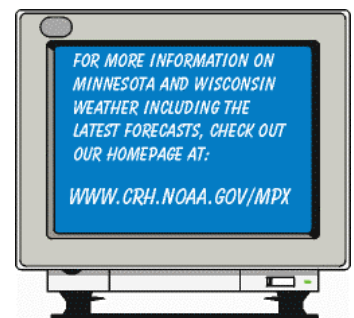
Our office frequently receives requests for sources of thermometers, weather radios, rain gages, etc. Below is a partial list of radio and instrument distributors and manufacturers:

Weatherama	www.weatherama.com	952/432-4315
Davis Instruments	www.davisnet.com	510/732-9229
Peet Bros	www.peetbros.com	866/446-1216
Rainwise, Inc.	www.rainwise.com	800/762-5723
Texas Wx Instr.	www.txwx.com	800/284-0245
Wind & Weather	www.windandweather.com	800/922-9463
Weather Info. Syst.	www.weathermarket.com	877/864-3976
Weather Store	www.theweatherstore.com	800/646-1203
American Wx Ent.	www.americanweather.com	800/293-2555
Weather Affects	www.weatheraffects.com	800/317-3666
Weather Radios.com	www.weatherradios.com	800/818-6505
Radio Shack	www.radioshack.com	800/843-7422
Oregon Scientific	www.oregonscientific.com	949/608-2848
Midland Electr.	www.midlandradio.com	816/241-8500
MTS Comm.	www.emergencyaleradio.com	919/553-2995
Homesafe, Inc.	www.homesafeinc.com	800/607-6737
C. Crane Co.	www.ccrane.com	800/522-8863

The NWS has made every effort to identify all qualifying known vendors of NOAA weather radios. This listing is for informational purposes only. The NWS does not endorse any particular company over another, whether listed or not. The NWS makes no guarantees concerning the quality of products available from any of the vendors listed.

Please feel free to call, email or write us with comments or suggestions. Our address is:

**National Weather Service
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Chanhassen MN 55317-
8581**



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